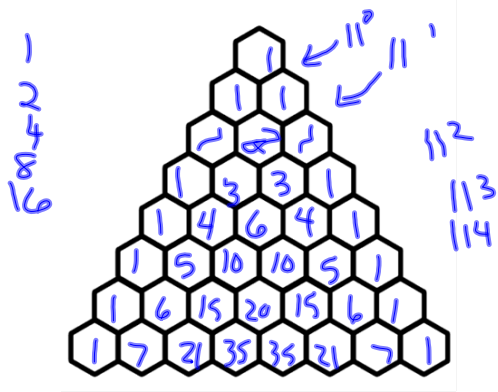
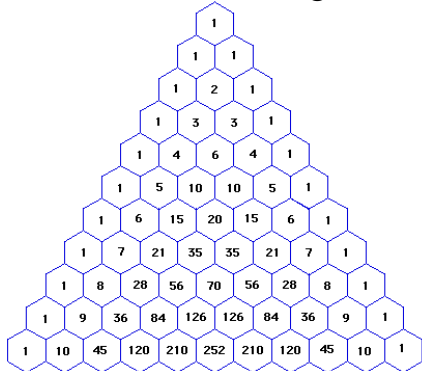


11.7 The Binomial Theorem

Pascal's Triangle

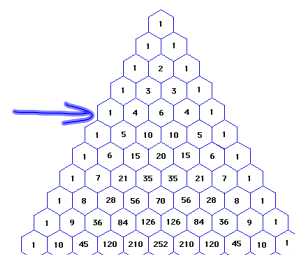
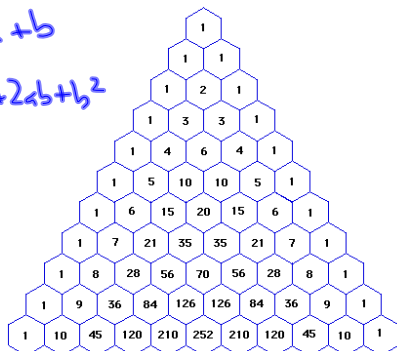


Pascal's Triangle

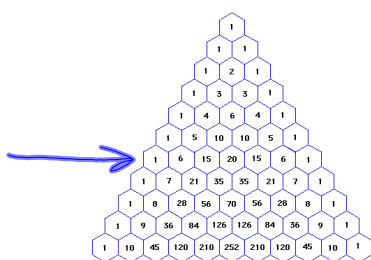


patterns

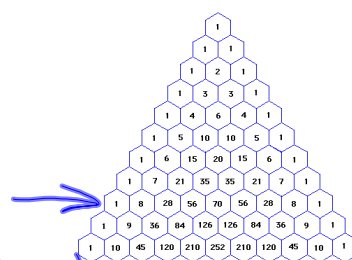
$$\begin{aligned}(a+b)^0 &= 1 \\ (a+b)^1 &= a+b \\ (a+b)^2 &= a^2+2ab+b^2\end{aligned}$$



$$(a+b)^4 = b^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4$$

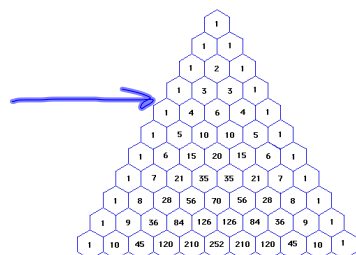


$$(x+y)^6 = x^6 + 6x^5y + 15x^4y^2 + 20x^3y^3 + 15x^2y^4 + 6xy^5 + y^6$$



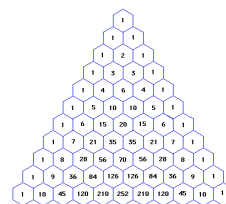
Alternate signs

$$(t-s)^8 = t^8 - 8t^7s + 28t^6s^2 - 56t^5s^3 + 70t^4s^4 - 56t^3s^5 + 28t^2s^6 - 8ts^7 + s^8$$



$$(3x - y)^3 = (3x)^3 - 3(3x)^2y + 3(3x)y^2 - y^3$$

$$27x^3 - 27x^2y + 9xy^2 - y^3$$



$$(2x + 3y)^5$$

$$= 32x^5 + 240x^4y + 720x^3y^2 + 1080x^2y^3 + 810xy^4 + 243y^5$$

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19, 23, 24, 26, 28

Attachments

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pascal.gsp